

# A new version of HadSLP

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# Outline

- HadSLP version 1.0
- Methodology
- Problems with HadSLP 1.0
- New Marine (I-COADS) and land obs.
- Preliminary results
- Summary and future plans

# HadSLP 1

- Gridded 5 x 5 degree product, 1871-1998
- Marine - Met Office Marine data bank & COADS
- Land - CSIRO, NIWA, CRU, CLIMAT, GHCN, Roseau Mondial, WWR & various sources
- Employed Reduced Space Optimum Interpolation (RSOI, Kaplan et al. 1997) to give globally complete coverage

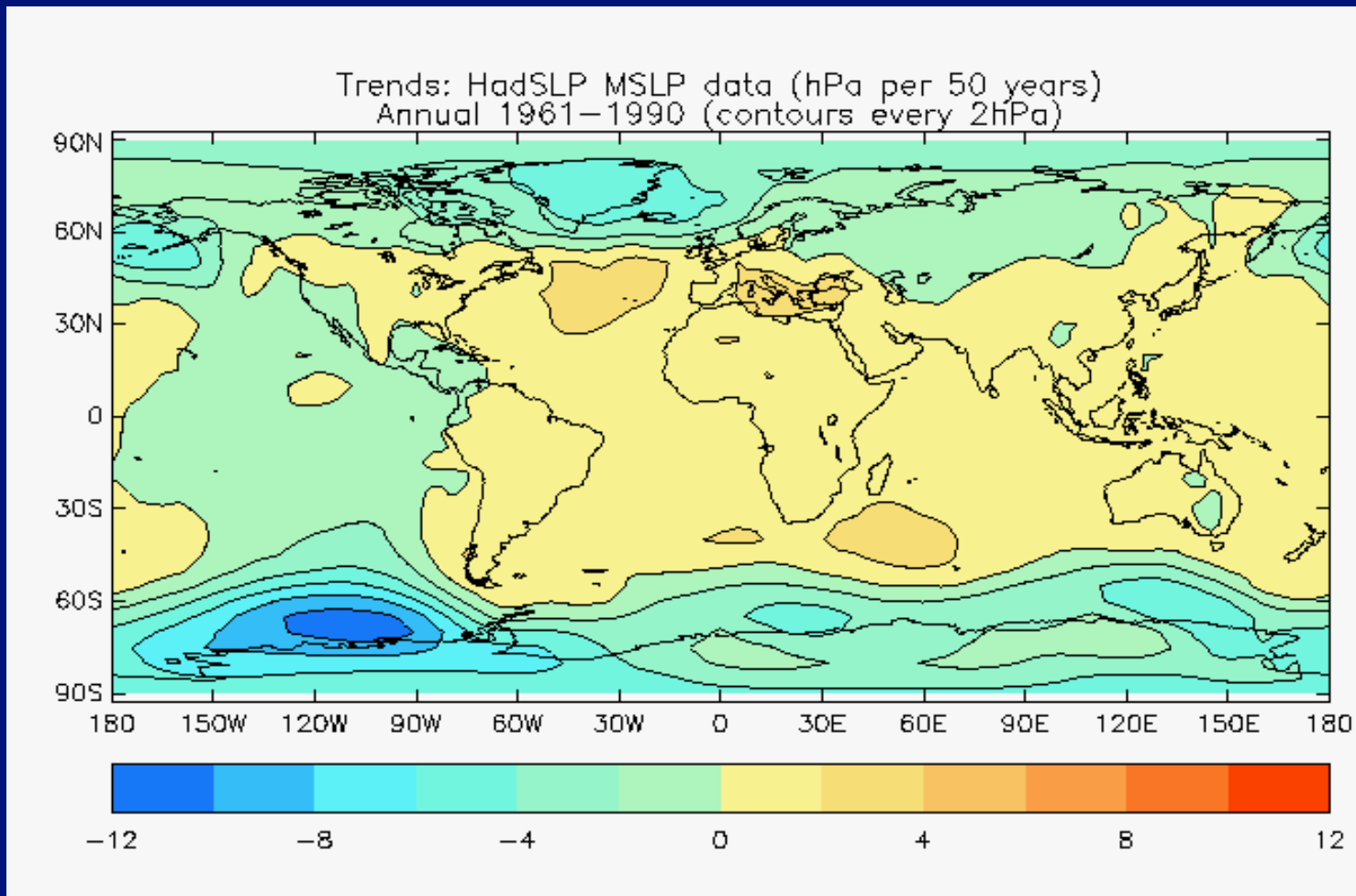
# Methodology

- Quality control (QC)
  - Marine data QC involves comparison to background field.
  - standard gravity, ship deckheights, Paris longitude, reduction to mean sea level, correction for effect of semi-diurnal oscillation, nearest neighbour checks, remove jumps, trends (with reference to station histories)
- Gridding & blending of marine and land obs
- Interpolate over data sparse regions (RSOI)

# Problems with HadSLP 1.0

- Spurious trends in the high southern latitudes
  - evident in NCEP reanalysis and ECMWF fields, which were used to create the EOF patterns for the RSOI analysis.
  - Poor spatial coverage in high southern latitudes
- Static error field
- Unable to be readily updated in near real time

# HadSLP annual trend



# New data sources

- Extend HadSLP to 1850-2001
- Marine
  - I-COADs
- Land
  - digitisation efforts
  - requests for data through international collaboration

# Preliminary Results

- Marine observations

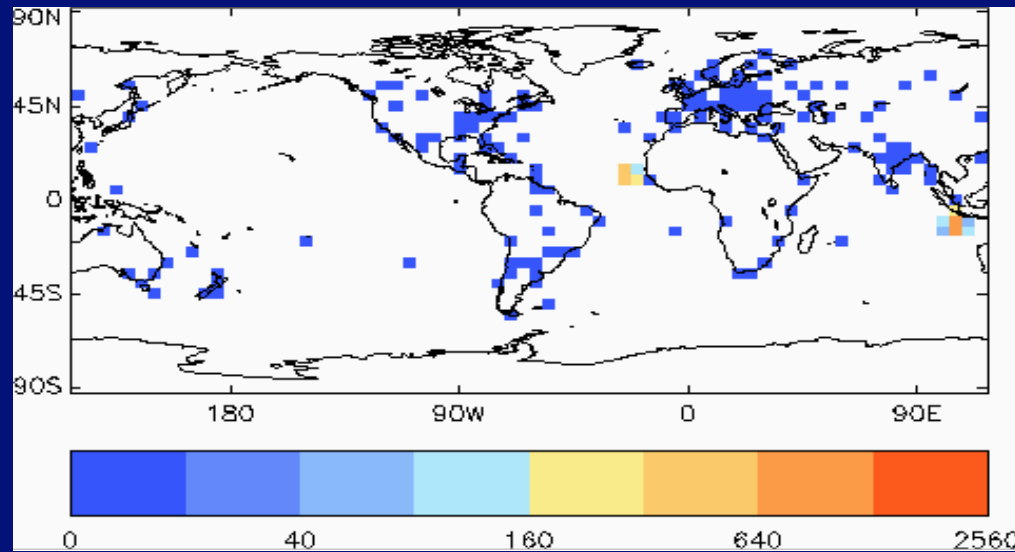
- gridded marine MSLP product, 1826-2001
- increased coverage in southern mid-latitudes
- potential to remove spurious trend

- Land observations

- anticipate to increase number of stations from 719 to, roughly, 1500 (as collected to date).

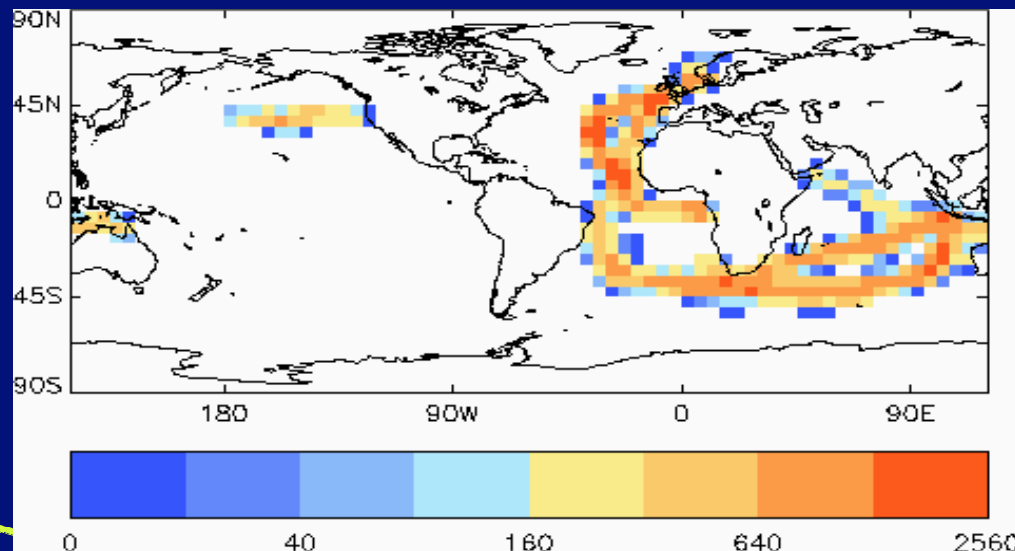


# Improved spatial coverage: 1871



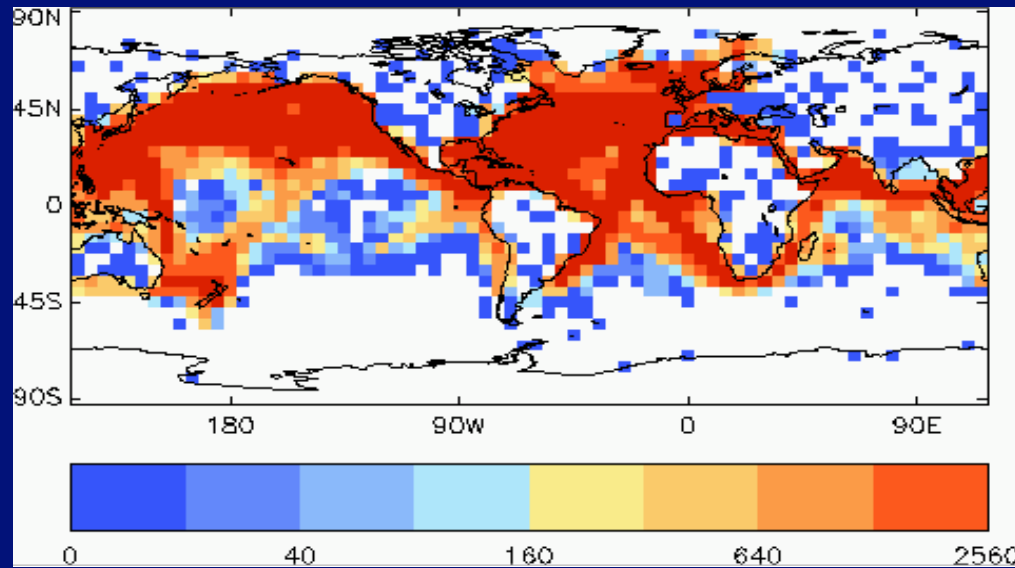
HadsIp  
(land & marine)

Number of observations



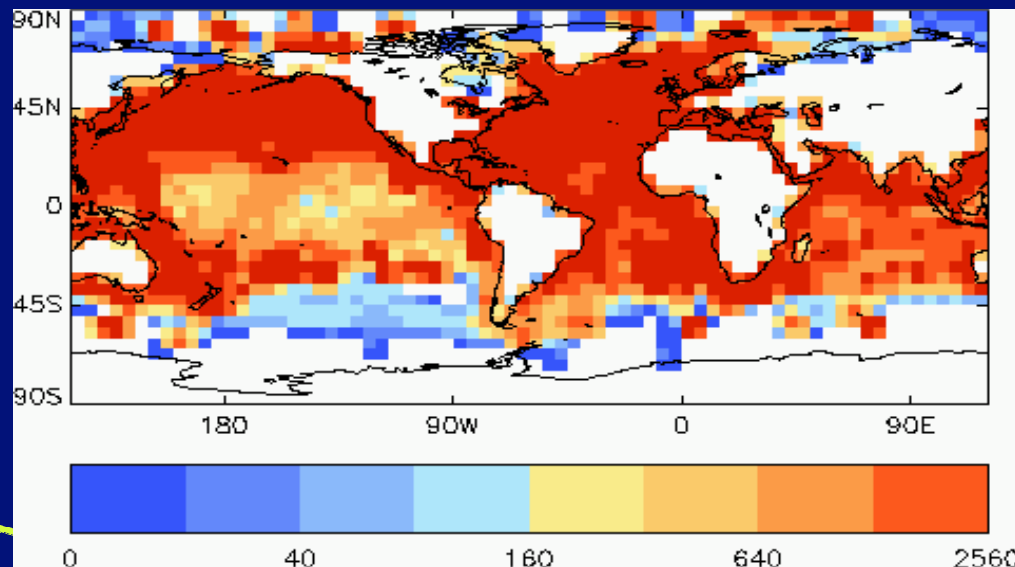
I-COADs  
(marine only)

# Improved spatial coverage: 1980



HadsIp  
(land & marine)

Number of observations



I-COADS  
(marine only)

# Future plans

- Include uncertainty estimates
- Updated in near real time
- Include I-COADs wind measurements and potentially CLIWOC records.
- Bring to 24 hour means
- Non-static error field for RSOI analysis